



# Burrowing Owl Conservation Initiatives

NELP Fact Sheet No. 4

*Success Stories*

October 1996

## ABSTRACT

This is the fourth in a series of fact sheets developed to provide information on technologies and strategies demonstrated at Naval Air Station (NAS) North Island under the Navy Environmental Leadership Program (NELP). This fact sheet provides information on two NAS North Island burrowing owl conservation initiatives. The first is an innovative approach to raising public awareness that protects owl burrows. The second is an owl habitat enhancement program that proactively minimizes conflicts between Navy operational needs and conservation compliance requirements. The intent of this fact sheet is to promote the use of similar management strategies for resource conservation at other naval installations.



loss on the southern California coast and land management practices at NAS North Island, there were fewer than 10 owl nests on NAS North Island. Despite the dramatic population decrease, the burrowing owl community at NAS North Island remained one of the largest in southern California.

Burrowing owls inhabit open, dry grassland and desert areas. They usually nest in abandoned burrows of ground squirrels or other small mammals, although they will use pipes, culverts, and nest boxes if burrows are scarce. They feed primarily on insects, but occasionally will eat small mammals, reptiles, birds, or carrion. During the daytime, they frequently perch or stand at their burrow entrances.

Burrowing owls and their nests are protected from destruction under the Migratory Bird Treaty Act, and they are candidates for threatened status under the federal Endangered Species Act. At NAS North Island, the Natural Resources Office (NRO) of the Staff Civil Engineer department is responsible for complying with

## BACKGROUND

On October 23, 1993, the Secretary of the Navy approved the implementation of NELP at NAS North Island in California and Naval Station Mayport in Florida. The Navy established NELP to focus efforts on finding new, improved, and more cost-effective ways to manage environmental programs Navy-wide. NELP initiatives at NAS North Island focus on identifying and demonstrating innovative cleanup, compliance, pollution prevention, and conservation technologies, as well as innovative management strategies.

Numerous burrowing owls nested and hunted on NAS North Island when the station was commissioned in 1917. However, by the late 1980s, as a result of habitat

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the Endangered Species Act, Migratory Bird Treaty Act, and any other regulation related to the preservation of natural resources found on NAS North Island. The NRO initiated a public education program about burrowing owls in 1991, as well as a habitat enhancement program.

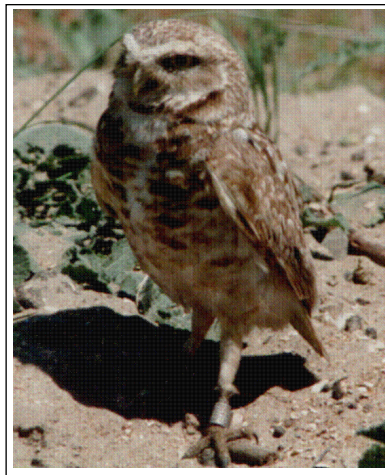
## EDUCATION PROGRAM

When it was initially suspected that the burrowing owl population was decreasing, the NRO began banding resident owls and studying their behavior patterns at NAS North Island. The NRO determined that owl habitat loss was occurring for two primary reasons: (1) crushing of burrows by lawnmowers, and (2) destruction of burrows to control ground squirrels. To combat burrow loss and the resulting reduction in burrowing owl population, the NRO developed a public education program.

The goal of the public education initiative was to place nesting information at strategic locations where people would be likely to observe owls. This approach was intended to both visually and cognitively identify the link between the burrowing owls and their burrow systems. By improving public understanding of the owl and its relationship with ground squirrel burrows, people would be more likely to modify their behavior to preserve burrows.

Beginning in the summer of 1991, each nest burrow was located and clearly marked with a 20 by 30 centimeter yellow sign riveted to a polyvinyl chloride (PVC) post 1.5 meters high. The sign displays a picture of the burrowing owl with the following warning: "Burrowing Owl Nest - Do Not Fill, Bury, Gas, or Apply Pesticides." Each sign was placed within 0.25 meters (m) of the burrow entrance and was sited to be clearly visible to recreationists and maintenance workers. Each sign was also positioned so that lawn tractors would be directed to maneuver around the nest to avoid the post.

To further protect the nests and educate the public, three informational signs measuring about 1 by 0.5 m were strategically placed in the most heavily used recreation areas and in centers of burrowing owl colonies at NAS North Island. These signs each provide a brief description, local history, and ecological perspective of the



burrowing owl colonies.

Following the 1991 breeding season when the nest colonies were identified, the number of burrowing owl nests increased significantly from 17 to 26 in 1992. This year, 32 nests were counted. Small annual increases in

the number of burrowing owl nests are expected to continue, but the increases may not be as dramatic as the population jump in 1991, which was most likely a direct result of the sign posting activity.

## HABITAT ENHANCEMENT PROGRAM

When it was discovered that a burrowing owl nesting area would be impacted by the development of an eel-grass mitigation area along NAS North Island shoreline, the NRO developed an innovative habitat enhancement plan to accommodate the Navy's conflicting operational needs and conservation requirements.

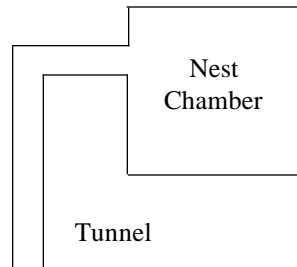
The Navy plans to dredge San Diego Bay to accommodate Nimitz Class aircraft carriers. This project includes construction of an eel grass zone in the northwest shoreline of NAS North Island. The northwest shoreline is now a forage area for burrowing owls. Under the Clean Water Act, wildlife habitat that is destroyed is required to be reestablished, and thus NAS North Island must create an intertidal eel grass zone similar to the one being impacted. Since the area that will provide suitable mitigation land for the eel grass zone is currently occupied by burrowing owls, a new nesting area must be created to provide habitat for the displaced owls.

In addition to the burrowing owl, the NRO must protect the least tern. The least tern is an endangered species that is often preyed upon by burrowing owls. Since NAS North Island manages a least tern nesting area and knowingly relocating a species to an area that may adversely affect another endangered species conflicts with the goals of the Endangered Species Act,



the location of the new owl habitat must be carefully considered.

The solution developed by the NRO was to construct an artificial "condominium" area consisting of 25 manmade wooden burrows. Each burrow consists of a nesting box and a tunnel. The nesting box measures 18 by 18 inches and 12 inches high. It has a dirt floor. It is placed at the



end of a 6-foot tunnel, 6 inches high which has a 90-degree turn 2 feet from the box. It is hoped that the owls will inhabit the new burrow area, and the current owl population at NAS North Island will be maintained. The owl "condominium" is located in the southern portion of North Island, away from the least tern nesting area at the center of North Island.

In August 1996, an additional 12 manmade burrows were installed near the NAS North Island golf course to mitigate the loss of burrows in a removal action at Installation Restoration Site 9.

Testing with radiotelemetry equipment to determine whether the owl habitat enhancement program will be successful is currently in progress.

## IMPLEMENTATION COST

The total cost for the education program through sign posting was about \$4,000. The minimal costs associated with the education and relocation initiatives provide environmental and other benefits that cannot be quantified.

## BENEFITS TO THE NAVY

Innovative conservation strategies such as public education and habitat enhancement for the burrowing owl afford the following benefits:

*Coordinated Planning.* The habitat enhancement program proactively minimizes the conflicts between the management practices needed to conserve and protect a species and the ongoing operational needs of an active naval station.

*Proactive Compliance.* The education and relocation

programs preserve burrowing owls and their nests as required by the Migratory Bird Treaty Act.

*Preservation of Species.* A successful conservation program ultimately contributes to the preservation of species and food web biodiversity; the preservation of species diversity has immeasurable value to the community of which the Navy is a member.

*Proactive Public Relations.* A public education program informs the public of the Navy's environmental commitment.

## SOURCES OF ADDITIONAL INFORMATION:

Additional information about burrowing owl conservation or the NAS North Island NRO can be obtained from the following contacts:

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NELP project briefs are accessible via the World Wide Web at the following address:  
<http://www.nasni.navy.mil/~nelp/nelp.htm>

## MAILING LIST

If you would like to be included or change your address on the mailing list for NELP fact sheets, please fill out, detach, and fax or mail this form to NAS North Island at the address below.

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